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Jewish Vitality.

See page 310.

HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &c.

VOL. XIV.—No. 358. FRIDAY, FEBRUARY 14, 1890. [PRICE TWOPENCE.

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[An Extract from "The Monthly Homœopathic Review," May 1st, 1870.]

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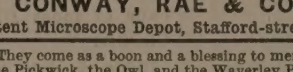

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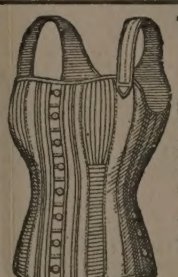

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 14, 1890.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

IN the course of some remarks made by Dr. Spicer at a late meeting of the Odontological Society of London, he said he had been struck with the frequency with which decayed teeth were associated with obstruction of the pharynx and enlarged tonsils; so much so that he had made it a routine practice to examine the teeth in all cases of nasal obstruction, and he believed that there existed a relation between them. He inclines to the belief that there is a relation between some cases of vaulted arch, narrow jaws, and irregular teeth, and nasal obstruction. Normally, says the journal from which I quote, we should breathe through the nose, so as to warm and filter the air respired. All animals, savage races, and young infants do so; but a large number of adults of civilized nations breathe through the mouth, because they have some obstruction of the nasal passages —erectile tumours, permanent catarrhal affections, polypi, &c.

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MOUTH-BREATHING, Dr. Spicer maintained, as a predisposing cause of decay of the teeth, came into action in various ways. The teeth were exposed to a current of air of a much lower temperature than that of the body, which would tend to cause inflammation of the periosteum and pulp of a tooth; the cold dry air produced congestion of the mucous membrane, with a secretion of stringy acid mucus; and the rapid evaporation of water which takes place when the mouth is kept constantly open inspissated this mucus, which so formed a fertile soil for the development of germs. Again, when sleeping with the mouth open, the tongue falls back and the saliva of the parotid gland finds its way directly through the pharynx instead of bathing and washing the teeth. Mr. Catlin's views about keeping the mouth shut, find confirmation in Dr. Spicer's remarks.

✣ ✣ ✣

A FOREIGN observer has carried out some instructive researches into the effect of salt on various disease-germs. He found that the results varied a good deal, according to the particular microbe experimented upon. The cholera bacillus, for example, curled up and died in a few hours, while the bacillus of typhoid fever and the micrococci of pus and erysipelas resisted its influence for weeks, and even months. That part of his observations bearing on tuberculosis possesses a practical importance, owing to the custom in slaughter-houses of salting the flesh of animals recognized to be tuberculous, and exposing it for sale in the course of a few weeks. M. de Freytag has shown that the germ of consumption thrives in the presence of an excess of salt, and salting the tuberculous tissues of an ox in no wise prevented the infection of animals fed thereon. Hence it is highly desirable that a stop should be put to a practice which exposes those who partake of the diseased meat to such obvious risks of infection.

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DR. S. PLACZEK, following up some laboratory experiments by Preyer and Flashaar on the effect of spraying a considerable part of the body surface of animals with cold water, has applied the spray for the purpose of reducing febrile temperatures in human beings. In the case of a man suffering from phthisis, whose temperature was high, he found that, by spraying about a pint of water at between 60 and 70 degs. Fahr. over his body, the temperature fell to normal, and continued so for several hours. Again, a similar method was satisfactorily applied in the case of a girl with diphtheria. In the healthy human subject, the spray lowered the temperature nearly two degrees, and in animals which had been put into a condition of blood-poisoning and fever by injections of germs, the temperature was reduced to normal by the spray. By keeping healthy guinea-pigs and rabbits some hours under spray, and using from half a pint to a pint of water at the temperature of the room (44 to 60 degs.), the temperature of the animals fell several degrees.

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DR. ESCHERICH, of Munich, has been advocating reform in the artificial feeding of infants. He bases his belief in the necessity of such a reform on the errors produced by Biedert's theory, which depends upon the difference between cow's milk and normal human milk. Biedert's view was, that all the troubles and diseases occurring in artificially fed infants were due to the indigestion of the caseine of the cow's milk, causing irritation of the mucous membrane of the bowels. He therefore considered that, if the latter were diluted so as to contain one per cent. only of caseine, the infant could not possibly take an injurious quantity of this noxious substance. Dr. Escherich considers that this theory, and the practice resulting from it, have gone far to prevent due care being exercised as to much more important conditions.

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SUCH are, according to the lecturer, germs and fermentation in improperly kept cow's milk; the number of meals, and the quantity of food given at a time in proportion to the capacity of the infantile stomach; the total quantity of nutritious matter, and its proportion in the food; and, finally, the injurious effect which the water which has been added to the food has on the digestion and the metamorphosis of nutritious matter. Dr. Escherich holds it, above all, necessary to return to physiological principles, and so to approximate artificial feeding as much as possible to the mother's milk, as regards the absence of germs and the number and quantities of meals. The lecturer then pointed out that it is easy enough, by sterilization of small quantities of

milk according to Soxhlet's plan, to comply, at least theoretically, with all these conditions, and at the same time to limit the quantity of caseine so as to fulfil Biedert's requirements.

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AT the meeting in Berlin last spring of the German Association of American Dentists, the best means of preserving the teeth were discussed, and Dr. Richter, of Breslau, said:—We know that the whole method of correctly caring for the teeth can be expressed in two words, *brush* and *soap*. In these two things we have all that is needful for the preservation of the teeth. All the preparations not containing soap are not to be recommended; and if they contain soap, all other ingredients are useless except for the purpose of making their taste agreeable. Among the soaps, the white Castile soap of the English market is especially to be recommended. A shower of tooth preparations has been thrown on the market, very few of which are to be recommended. Testing the composition of them, we find that about 90 per cent. are not only unsuitable for their purpose, but that the greater part are actually harmful. All the preparations containing salicylic acid are, as the investigations of Fernier have shown, destructive to the teeth. He who will unceasingly preach to his patients to brush their teeth carefully shortly before bedtime, as a cleansing material to use Castile soap, as a mouth wash a solution of oil of pepermint in water, and to cleanse the spaces between the teeth by careful use of a silken thread, will help them in preserving their teeth, and will win the gratitude and good words of the public.

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AN interesting calculation has been made that a pianist, in playing a presto of Mendelssohn, played 5,595 notes in four minutes and three seconds. The striking of each of these notes, it has been estimated, involved two movements of the finger, and possibly more. Again, the movements of the wrists, elbows, and arms can scarcely be less than one movement for each note. As twenty-four notes were played each second, and each involves three movements, we would have seventy-two voluntary movements per second. Again, the place, the force, the time, and the duration of each of these movements was controlled. All these motor reactions were conditioned upon a knowledge of the position of each finger of each hand before it was moved, while moving it, as well as of the auditory effect in force and pitch, all of which involves at least equally rapid sensory transmissions. If we add to this the work of the memory in placing the notes in their proper position, as well as the fact that the performer at the same time participates in the emotions the selection describes, and feels the strength and weaknesses of the performance, we arrive at a truly bewildering network of afferent and efferent impulses, coursing along at inconceivably rapid rates. Such estimates show, too, that we are capable of doing many things at once. The mind is not a unit, but is composed of higher and lower centres, the available fund of attention being distributable among them.

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IN reply to several correspondents, I have to announce that a discussion on the place of Mesmerism in medical practice will shortly be commenced in HEALTH. This topic appears to be coming to the front in a marked degree; and as opinions differ materially regarding the value and safety of hypnotism, as a remedial agent, I hope to evoke some measure of certainty regarding its action by the discussion in question.

Original Essays

"Life is not to live, but to be well."—*Martial.*

JEWISH VITALITY.

BY DR. ANDREW WILSON.

THE "ancient people" of Israel have always possessed for the sanitarian a powerful charm, and an interest of undeniable kind. Not only because their history, as related in the Old Testament, is a record bound up in the most intimate manner with the prevailing religion of our day, but also because of the marked individuality of the race, have the Jews formed the topic of many thoughts and words of hygienic kind. For one thing, we know that their religion had bound up in it, as essential parts of its structure, maxims and laws of a sanitary nature. Any one reading the Mosaic record, and perusing attentively the old codes under which the Jews lived and flourished, cannot avoid the conclusion that their religion, above all things else, was a religion of health.

The physical well-being of the individual and of the nation alike was rigidly supervised. It was made the basis of the art of successful living, and of the accurate performance of those duties which devolved upon them, as heads of families, and as citizens of a great kingdom. One has only to think of the strict regulations regarding food set forth in the Old Testament to awake to the fact that ancient Hebrew legislation foreshadowed much that modern hygiene teaches. The laws regarding the isolation of the diseased and the ordinances of purification are all so many ancestral ideas, as it were, of the rules whereby modern sanitarians hope to restrict the spread of our modern plagues. One may even find a reference to the disinfecting properties of earth (possibly in relation to the prevention of typhoid fever and of its diffusion) in the expression which occurs in Deuteronomy xxiii. 13, with reference to the use of the "paddle." Taking the old Jewish code as a whole, it was undeniably a sanitary religion; and as such, afforded the material basis whereon the practical outcome of the promise and desire "to multiply and replenish the earth" was duly and firmly founded.

The reward of the close observance of health-laws, as Dr. Farr long ago pointed out, is found in the cumulative effect which healthy habits invariably exhibit. He said, "A slight improvement for the better in each generation implies progress in a geometrical progression, which yields results in an indefinite time, that, if suddenly manifested, would appear marvellous." On these lines the Jewish race has, undoubtedly, flourished exceedingly, from the sanitarian's standpoint. It has been through no miraculous interference with the race that the high vitality of the Jews has originated, but simply and solely because they early discovered the laws of healthy living; and, as George Combe in a later day maintained, because they lived up to that knowledge, without which the people perish and die. It is well worth while at the present time, when so much is heard regarding the degeneration of life in cities, that we should study and bear in mind the lessons Jewish history teaches. From the pages of the Scriptures, and from the experience of sanitarians, we may be taught many lessons of vast importance to us, "the children of a later time."

It is certain, first of all, that the Jews do not exhibit an immunity from certain scourges of humanity in the shape of disease. They are as subject, for instance, to cancer—a hereditary ailment—as are other races. Ner-

vous diseases of a particular type, the melancholic, affect them equally with their Gentile brethren. Their health-code is, therefore, like every other item of human kind, subject to its defects and shortcomings. Although they may escape the pork tape-worm, they are just as liable as are Christians to the attack of the parasites we find in beef and mutton. But, over and above these exceptions, the Jews have a really great record to show in the way of escape from maladies which affect other races.

For example, suicide is much less common among them than among their neighbours. They are not affected by consumption, and other diseases of tubercular kind, as are the Gentiles; from acute nervous ailments they are especially free; and of epidemics, which spread with force and power among other nations, the same remark holds good. "From epidemics," says Dr. Richardson, "the Jews have often escaped, as if they possessed a charmed life." These alone are interesting facts, because they indicate clearly enough that racial differences, founded on health-observances and not merely accidental conditions, lie at the root of the sanitary safety of the race. In other words, the Jews are reaping the benefits which their fathers sowed in the old days. They are teaching us Dr. Farr's lesson with intense force: that just as disease operates with cumulative effect to weaken and then to wipe out of existence a neglectful race, so also health, in its turn, acts in geometrical ratio to save the children of wisdom from the pestilence and the plague.

We can appeal to exact statistics to confirm the general proposition, that Jewish vitality is a striking feature of the race, just as we have seen its dependence upon, and origin in, the strict observance of health-laws from generation to generation. In 1864 Mayer published a series of accurate investigations, made with reference to the life of the conscripts in the town of Fürth. At this time the population of the town was anything but typical, from the sanitarian's standpoint. The conscription found grave defects in Fürth; so much so, indeed, that the exemptions from active service, chiefly on account of deficient physical development and deformities, was one-half greater in Fürth than in Munich. The population on which Mayer's observations were made, as Dr. Richardson remarks, was therefore one which presented nothing in favour of common vitality. It was of inferior description all round; and, being altogether poor, the Jewish side of things had no advantage whatever (but rather the reverse) over the Christian side.

After ten years' observation, the Jews of Fürth were found to present a very marked difference over their neighbours. Beginning with the first period of life, it was shown that among children from 1 to 5 years old the Jews lost 10 per cent., while those not Jews lost 14 per cent. From infancy onwards to the age of 60, the Jews of Fürth were shown to hold their own in this matter of vitality. From 60 to 70 the death-rate of Jews were given at 12; and of others, of the conscripts, at 9·8. From 70 to 80 the Jews showed 9 per cent., and the others 8·9; while from 80 to 90 years the mortality was 8·1 for the Jews and 2·4 among the others.

The high figures among the older Jews were explained in a satisfactory fashion. After 60 years it would appear, as above shown, that the Jew had a less tenacious hold on life than the Gentiles. Mayer, however, showed clearly that the larger figures merely meant that *more* Jews lived on to die after 60, and that this excess of subjects naturally raised the figures of Jewish mortality. Between the ages of 80 and 90 so many Jews still survived that their deaths gave the figures above noted of 8·1 per cent., as compared with 2·4 of the Christians; a result thus due simply to the survival and vital pertinacity of the Jews over their neighbours.

The statistics for Frankfort were equally startling. There the ancient people lived, it is pointed out, under conditions the reverse of healthy or socially agreeable. They were largely social pariahs; they were denied the privileges of other citizens; and with such environments it would not have proved remarkable had the health-statistics of the race been of untoward kind. Once again, however, Jewish vitality comes to the front in the race for life and happiness. Taking the average mortality of the whole population of Frankfort, Jews and Christians together, it was found that it amounted, as regards duration of life, to 37 years and 7 months. Calculated, however, as to its proportionate elements, the Jews came off with a duration of life of 48 years and 9 months; while their neighbours showed a duration of only 36 years and 11 months.

The children of Jews, during their first 5 years of life, showed a death-rate of 12·9 per cent.; for others it was 24·1 per cent. Of adult Jews, 54 per cent. (of both sexes) reached the age of 50; and only 38·1 per cent. of the other classes attained that age. Among the Hebrews, 24·7 per cent. reached the age of 90; the proportion of Christians attaining that patriarchal age being only 13·4 per cent. Other statistics show that one-half of the Jews reach the age of 53; while one-half of other races attain the age of 36; and while one-fourth of the Jews reach 70, one-fourth of the Christians scarcely attained 59 years and 10 months. So also investigation into special classes and orders of the population at Frankfort showed the same disproportion. Taking 100 merchants among the Jews, 50 were found to die before attaining the age of 61. Of 100 merchants not Jews, 50 died before attaining the age of 57.

It has been calculated that on almost all points of comparison the vitality of the Jews has exceeded that of other races; and as regards Jewish life in England, Dr. Richardson has shown that "the vitality of the Jews in London contrasts, as elsewhere, favourably with that of the members of other classes of the community." The death-rate of London Jews in infant-life stands as 44 of the Jews to 45 of the whole population; but later on, from 35 to 45 years of age, the mortality shows that only 5 Jews die to 8 of other classes. The contrast is still more striking in old age. At 85 and upwards, the number of Jews who died was 2 to 0·8 of the whole population. The Jews who died at over fourscore years "were nearly 3 to 1 when compared with their neighbours of different faiths." It may be added that in the matter of longevity the Jewish women surpass the men. Eleven female Jews lived to over 90, to 5 male Jews; and 53 women died between 80 and 90 years, to twenty-two men of the same age.

One important consideration remains for remark. I have already said that the Jew owes his vitality to the careful husbanding of his vital resources. "As thy days, so shall thy strength be," is an axiom which may very well be read in the contrary way; and it is the attention to health-laws in the earlier days of his race that has given to the Jew a racial strength which prolongs his years even among conditions of life often the reverse of sanitary and the antipodes of pleasant.

Again, there are other records—Dr. Richardson gives us the county of Monmouth and the town of Montreux—showing that wherever men of any race will observe health-laws faithfully, they are certain to reap the reward of length of days and physical prosperity. The

Jews possibly at the start owed nothing to their race-characters; but we must not forget that in time "circumstances make the race," and environments mould and conform even a nation's constitution. In brief, the lesson we of to-day have to learn is the old teaching, that to be healthy and long-lived is no matter of chance, but of pure living in the truest sense. Let us daily bethink ourselves of the truism that "man is the minister of his own fortunes and misfortunes in the matter of health." It is knowledge, and not haphazard fate, which puts length of days into the right hand of any individual, of any community, or of any nation.

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SIXTH PAPER.

THE PLANTS IN THE WINDOWS.

If we are not all born gardeners, we all have some love for flowers and plants. If we do not care to toil in our gardens after the daily routine of work is finished, yet we like to see those gardens neatly kept, and full of brightly coloured and choice smelling flowers. Those of us who are forced to live in the town, and cannot possess a garden—for we can hardly dignify the narrow strip of ground attached to town houses with such a name—have the next best substitute, a box of plants in the window. Plants growing in gardens or in boxes flourish and grow by the same chemical means; so that whatever we learn about plants in the window, will help us to understand similar processes in the life of plants of the field. It matters not to us just now what the plants may be—even the despised weed will serve our purpose—for we are not going to study the plants themselves, that would be trespassing on the preserves of the botanist; we simply wish to know the chemical principles involved in the life of a plant.

A plant consists roughly of a root, which fixes it in the soil, and extracts food from the soil; and a stem bearing leaves, which extract food from the air, and which ultimately, in the majority of cases, produce flowers and seeds to propagate its species. If you take a plant and burn it in air, a certain amount passes off in the gaseous condition, and another portion remains as a white ash. The gaseous portion represents the portion of the plant derived or built up from the air, whilst the ash represents the parts built up from the food extracted from the soil.

In tracing the progress of growth, we naturally commence at the seed, which contains both the young plant in an embryonic state as well as the food necessary for it until it can procure food for itself. As long as the seed is kept dry, no chemical or vital action can take place, that is to say, it cannot germinate; but moisten it, and then its vitality is shown, for it germinates and begins to grow and produce a plant. Soil is not necessary for this, as is shown by the well-known method of growing mustard and cress on a piece of moist flannel.

After germination has taken place, a change will be noticed in the seed; two small portions have pushed their way through the coatings of the seed. One of these ultimately becomes the root, the other the stem; and the latter may be surrounded by one or two small leaves, termed by botanists cotyledons, which will now begin to absorb food from the air until the stem bears leaves and renders these cotyledons useless, when they disappear. As our plant is now growing in both directions, we can no longer take them together, but will confine our attention firstly to the root and its surroundings, the soil.

Soil varies in chemical composition; some soils being rich in plant-food, and in a good mechanical condition to favour growth. Others, again, are either deficient in plant-food, or are in such a mechanical condition that they cannot support plant life, and are barren. It is not always an easy question to answer what should be the composition of a fertile soil. Fertility depends on a number of causes, and on the presence or absence of a variety of chemical compounds.

If we subject a quantity of soil to a red heat, we can at once roughly divide it into two groups of constituents, viz., that portion driven off by heat, or destroyed in the popular sense, and that portion left practically unchanged. From the chemistry we have already learned, we should know that the portion driven off by heat would include water, carbonic acid gas, and organic matter, whilst the portion left unacted upon would consist of various mineral salts. The latter would, on further analysis, be shown to be divisible into a part soluble in strong acid, and another portion insoluble. We have now made a rough analysis of soil into a volatile portion, a soluble and an insoluble portion. Let us examine each of these parts separately. First the insoluble portion. It would consist principally of silicate of alumina, or clay, the basis matter of all soils, along with sand, and a little iron. The soluble portion would contain silicates, lime, phosphoric acid, sulphuric acid, potash, soda, iron, magnesia, and chlorides.

Of all these constituents sand, clay, and lime would constitute about 90 per cent. of the whole, and the preponderance of one or other would give the character to the soil, making it calcareous if lime predominated, or sandy, or clayey, as the case might be, with either of the other two ingredients. Now, although these constituents are present in such considerable quantities, they do not form the active constituents of the soil; these are the phosphoric acids, along with the alkalies, potash, and soda; and are present often in minute quantities. The larger the quantity of clay in the soil, the more difficult it is, as a rule, to cultivate; it gets lumpy, and cakes together, and prevents the passage of air through the soil. The presence of a certain amount of stone and sand facilitates the passage of air.

Next, as to the volatile portion of the soil, the part that was driven off at a red heat. This consists chiefly of organic matter, a necessity in all fertile soil. This organic matter serves as an important food, but it has to undergo chemical change in the soil before it becomes available. The organic matter is largely made up of a substance known to the agricultural chemist as "humus," a substance of such variable composition that it can hardly be classed as a chemical compound. It contains nitrogen, however, and this nitrogen is its valuable constituent.

By the action of minute *bacteria*, present in all soils, this nitrogen becomes converted into ammonia, and the ammonia into nitric acid, and in this condition it serves as a plant-food. This change is spoken of as nitrification, and can only take place in a soil sufficiently porous to allow air to circulate in it, or in presence of a base to combine with the nitric acid. It is a change, too, which only takes place in summer, ceasing entirely about the freezing-point. The presence of lime helps in the decomposition of organic matter, by gradually liberating the nitrogen as ammonia. The presence of humus also influences the fertility of the soil apart from chemical reasons. It darkens the colour, and enables it to

absorb a larger amount of the sun's heat. Clay, again, although useless as a direct plant-food, exerts a considerable influence in the fertility of the soil, for it has the power of both absorbing and retaining phosphoric acid, ammonia, and other ingredients which would be washed away or lost by drainage.

It will be seen, then, that the question of fertility or barrenness does not rest entirely on the chemical composition, but that a number of points are involved, making it an extremely difficult problem oftentimes to solve.

The quantity of plant-food actually present in a soil is very small. Taking phosphoric acid as one of the most important in our list, a good fertile soil may only contain two per cent.

Some plants will absorb certain ingredients of a soil, rejecting others, whilst another plant will absorb what previous growths have rejected. From these facts the rotation of crops is arranged so as to use up the food in any field. After it is used up we have to supply its place, and that is done by adding manure, artificial manure as it is sometimes improperly termed.

There is no such thing as artificial manures, all are natural. One might just as well talk of some new kind of bread as an artificial bread. The names and composition of the various manures used are so numerous and diverse that it would be impossible in the scope of these articles to even enumerate them. Certain manures are used, however, on a small scale for the city garden and flower-box, and if we examine them it will be as much as we can just now, for we do not want to turn you out complete agriculturists.

House-slops are frequently used as a manure, and owe their value to their containing organic matter, which is speedily converted into ammonia; and also to the presence of a small quantity of phosphoric acid and salts of potash and soda. Bones, again, are frequently buried in the flower-border, and are slowly dissolved by the organic acids in the soil, as well as by the carbonic acid gas, which the rain carries down. Bones are principally composed of phosphate of lime, and are used by the farmer as bone-dust or bone-ash. The solution of a bone in soil is, however, a slow process, and the farmer of the present day cannot afford to wait; they want to get as much value out of the manure as it contains, and in as short a time as possible. Therefore, before they put the bones in the ground, they dissolve them, or rather partially dissolve them, in sulphuric acid, or oil of vitriol; the phosphoric acid contained in the bones thus becomes at once available for plant-food.

It can readily be seen that plants are continually removing material from the soil, and a method of manuring must be resorted to to prevent the soil becoming barren. If all the food produced by a farm were to be consumed by the inhabitants and animals on the farm, the excrement of man and animals might be returned to the soil and keep it fertile, and to a certain extent this is done by manuring the land with farmyard manure; but if the crops of a farm are consumed, say, in a distant town, it is utterly impossible to carry this method out in anything like a complete manner.

So far, we have only dealt with the food in the soil. We have only to add that the porous nature of the root enables it to draw up the food in a state of solution, whence it is carried to all parts of the plant by aid of the fine vessels in the plant-tissue. Now we have to consider how the leaves act in procuring food. The food absorbed by leaves is in the gaseous condition, and consists chiefly of carbonic acid gas and water. In all probability some nitrogen is taken in too, but this is a matter of dispute, and has long been so. The great Liebig was of this opinion, but agriculturists, as a rule, did not believe in his theory. Of late years, however, there are some who seem inclined to go back and accept Liebig's conclusion as correct. In the meantime, however, we will leave it as a disputed point and return to the carbonic acid gas and water. On the under surfaces of leaves are a number of minute openings, termed stomata, of varying shapes and sizes, which communicate with air spaces in the substance of the leaf. In plants whose leaves float in water they are on the upper surface, and in a few instances they are found on both surfaces. These stomata serve as mouths to the plant, and, like our mouths, are sometimes shut and sometimes open. In dry weather they usually close, and thus prevent moisture passing through from the plant into the air; but in wet weather they remain open and absorb moisture from the air. In a previous paper some allusion has been made as to the chemical action taking place in the plant, but we must consider these actions more in detail now.

Babyhood continues its successful career as a magazine of the utmost service to mothers and nurses. Its pages are full of the most practical advice, and mothers may count upon the correct nature of its instructions. This monthly magazine may be certainly called "the mother's friend."

Pumiline Ointment.—Dr. Barnes, in *The British Gynæcological Journal*, says, "We should like to direct the attention of physicians to the great comfort derived from the use of Pumiline Ointment, not only for external applications in cases of eczema and irritability from other causes, but also for making medical examinations. We have tried it extensively, and have been more than satisfied with the result in both matters. For cleansing the hands we have also met with few articles so satisfactory and pleasant as the Pumiline Soap. For this latter, indeed, we confidently predict a considerable consumption, for its great purity and low price, combined with its unusual utility in the direction we have indicated, should make it a great favourite."

Alum in Bread.—Alum owes its power of blanching the paste of bread not to the alumina which it contains, or to the combination of this earth with the gluten, but to the sulphuric acid liberated by the formation of aluminum albuminate. According to Nothnagel and Rossbach, the prolonged daily use of alum in proportion of 0·05 to 0·1 grm. occasions gastric disturbances not unimportant. The author finds that the artificial gastric digestion of alumed bread effects the solution of all the alum present. Hence it is possible that a quantity of alumina equivalent to 0·20 grm. of alum may enter the circulation daily.

Catarrh, Catarrhal Deafness, Hay Fever.—A new Home Treatment.—Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness, and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N.B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of 2½d. stamp to pay postage, by A. H. Dixon & Son, 337 and 339, West King-street, Toronto, Canada.—*Christian Advocate.*

Sufferers from catarrhal troubles should carefully read the above.

A NEW HEATING AND VENTILATING SYSTEM.

IN connection with the recent articles in our pages by Dr. Drinkwater on air and ventilation, our readers will feel interested in the reprints of the Chesebrough Heater —an American invention, of which the Chesebrough Ventilating Company, 42, Holborn-viaduct, London, E.C., are the proprietors. The Chesebrough Heating and Ventilating System has been modelled on the plan proposed by Dr. John S. Billings, U.S.A., who, in his "Treatise on Ventilation," says that the best form of heating apparatus is that which has the largest amount of radiating surface as compared with the fire area. It demonstrates the possibility of utilizing a much larger volume of heat from a given amount of coal than has hitherto been practical, by simply increasing the radiating surface. In the Chesebrough Heater the radiating surface is one hundred times larger than the fire area. In no other existing furnace is this ratio equalled by nearly 80 per cent. Large and very heavy castings are used, set solidly in fire-clay, so as not to rack or get out of place. The entire number of joints in an apparatus now employed in a large office building is not one-half as many as are required in a portable furnace fit for a small dwelling. Thus strength and durability are assured from the very beginning. Aside from the cast-iron radiating surfaces, only fire-bricks enter into the construction of the fire-box and flue. Professor Morton says, "this manner of building should last a thousand years."

In ordinary furnaces when more heat is wanted, it is usual to pile on more coal and open all the draughts until the fire-pot is red-hot, regardless of racking and escaping gas. By the Chesebrough method of heating, the heat evolved from the coal is carried into and through a succession of metal domes, each of which is moderately heated, and thus a very much larger volume of air is warmed to a uniform and equable temperature, at a small cost for fuel, and with all the purity and invigorating quality of the air preserved. It is a beautiful example of economy in saving waste.

Under ordinary conditions barely 7 per cent. of heat is utilized. In the Chesebrough apparatus nearly 80 per cent. of heat may be utilized, and even then the smoke-pipe at the end of the radiating chamber is hot to the touch, showing that considerable heat is still passing up the chimney.

The design of the Chesebrough Heater is very clearly and briefly set forth in the patentee's specification. This runs as follows: "The object of my invention is to provide a hot-air furnace of extremely simple construction, and in which the hot products from the furnace or fireplace proper will be utilized economically for heating air to a desired temperature without burning the oxygen of the air or overheating it, and in which the products of combustion will not escape into the chamber or casing for heated air."

The fire-box is entirely outside the air-chamber, and connected with it by a flue, built entirely of brick and lined with fire-brick which passes through a base, running the entire length of the air-chamber. At intervals in this base there are openings in the flue, over which openings are placed the cast-iron warming or radiating surfaces, made in the shape of domes. These domes entirely cover the openings in the flue, and rest on the top of the base, their edges being firmly imbedded in air-tight cement. After the flue passes through the base it connects outside the warm-air chamber with the smoke-pipe leading into the chimney.

The heater operates as follows:—The fire being made in the fire-box, the flame and products of combustion pass over the bridge wall and down into the flue, until they come to the first opening, when they rise and circulate inside the dome, which absorbs a portion of their heat; they then pass down into the flue again, and along to the next opening under the second dome, and continue passing under all the domes in rotation until they pass out into the chimney.

In an ordinary furnace the temperature in the chimney will be almost equal to that in the fire-pot, thus indicating a large amount of waste heat, whereas in the Chesebrough apparatus the heat in the chimney need be little more than is necessary to maintain the draught. From this fact alone it is obvious that the greater part of the heat is absorbed by the domes, instead of passing up the chimney. Owing to the radiating surfaces being so large, it does not require such rapid consumption of fuel in the fire-box, and, as a consequence, a less amount is burned to obtain the same result; and there is both a saving in the value and quantity of the fuel consumed in the proportion of certainly one ton to three tons as compared with any other known system. The domes, or warming surfaces, are surrounded by solid brick walls, occupying a space about seven feet wide, and seven feet high, and roofed over with tiles, to form an air-chamber.

It is manifest that the more domes used in a furnace, the greater will be the radiating surface, and, consequently, the greater its economy of fuel, and there seems to be no limit to the number of domes which can be used, providing the draught in the chimney is sufficient. Very small houses can however be heated with a single dome, and even then the economy over any other known furnace will be very large, to say nothing of the pure, sweet air it will furnish, instead of the poisonous compounds and gases we are accustomed to.

The fresh air is conveyed to the warming chamber through the air-duct from outside, and if the air outside is not pure and wholesome, it is filtered before being admitted to the warming chamber. It enters at the floor of the latter, and as it is warmed it rises naturally, and passes up to the ceiling of the warming chamber, from whence it is delivered to any desired point in the building by means of air-ducts.

The temperature of this warmed air, and quantity delivered, are entirely controlled by the amount of coal consumed, as an increase of fire produces a higher temperature in the domes, which results in an increased radiation to the incoming air. The quantity of fuel consumed is at minimum for the service desired. No skilled labour is required; no extensive repairs are needed; in fact, none are necessary, except from gross carelessness; and the house-owner or holder has all the advantages of the most approved methods of ventilating and warming at a moderate expense of operation and outlay for repairs. His health is improved, his purse not impoverished, and his trials and tribulations are reduced manifold.

"From a sanitary point of view, the Chesebrough Design," says Mr. C. E. Wingate, the eminent sanitary engineer, "has no superior, and I take pleasure in commending it upon that account. It can supply a large volume of purified and moderately warmed air in any building at a minimum cost, and with the least care or risk of management—a desideratum much sought for, but so far vainly, by all house-owners and householders." This is strong testimony, but we regard it as thoroughly warranted by the excellences of the system under review.

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is not a good form of preparing meat, because it withdraws not only salts of importance, but proteids and the extractives—nitrogenous and other. Beef-tea is valuable chiefly because of these extractives, though it also contains a little gelatine, albumin, and fats. Salt meat furnishes less nutriment, a large part having been removed by the brine; notwithstanding, all persons at times, and some frequently, find such food highly beneficial, the effect being doubtless not confined to the alimentary tract.

Meat, according to the heat employed, may be so cooked as to retain the greater portion of its juices within it or the reverse. With a high temperature (65 degs. to 70 degs. C.) the outside in roasting may be so quickly hardened as to retain the juices.

In feeding dogs it is both physiological and economical to give the animal the broth as well as the meat itself. The poor man may get excellent food cheaply by using not alone the meat of the shank of beef, but the soup (extractives) derived from it. There is much waste not only by the consumption of more food than is necessary, but by the purchase of kinds in which that important class, the proteids, comes at too high a price.

It is remarkable in the highest degree that man's appetite, or the instinctive choice of food, has proved wiser than our science. It would be impossible even yet to match, by calculations based on any data we can obtain, a diet for each man equal upon the whole to what his instincts prompt. With the lower mammals we can prescribe with greater success. At the same time chemical and physiological science can lay down general principles based on actual experience, which may serve to correct some artificialities acquired by perseverance in habits that were not based on the true instincts of a sound body and a healthy mental and moral nature; for the influence of the latter cannot be safely ignored even in such discussions as the present. These remarks, however, are meant to be suggestive rather than exhaustive.

We may with advantage inquire into the nature of hunger and thirst. These, as we know, are safe guides usually in eating and drinking.

After a long walk on a warm day one feels thirsty; the mouth is usually dry; at all events moistening the mouth, especially the back of it (pharynx), will of itself partially relieve thirst. But if we remain quiet for a little time the thirst grows less, even if no fluid be taken. The dryness has been relieved by the natural secretions. If, however, fluid be introduced into the blood either directly or through the alimentary canal, the thirst is also relieved speedily. The fact that we know when to stop drinking water shows of itself that there must be local sensations that guide us, for it is not possible to believe that the whole of the fluid taken can at once have entered the blood.

Again, in the case of hunger, the introduction of innutritious matters, as earth or sawdust, will somewhat relieve the urgent sensations in extreme cases, as will also the use of tobacco by smokers, or much mental occupation, though this is rather illustrative of the lessening of the consciousness of the ingoing impulses by diverting the attention from them. But hunger, like thirst, may be mitigated by injection into the intestines or the blood. It is, therefore, clear that, while in the case of hunger and thirst there is a local expression of a need, a peculiar sensation, more pronounced in certain parts (the fauces in the case of thirst, the stomach in that of hunger), yet these may be appeased from within through the medium of the blood, as well as from without by the introduction of food or water, as the case may be.

(To be concluded.)

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

CONSTIPATION IN INFANTS.

By JOHN DORING, M.D.

OF the many ills to which infancy is heir, constipation is one of the most common. It is often productive of much trouble to the infant, and is a matter of great solicitude to the mother. Artificially fed children are more often the subjects of habitual constipation than those nourished exclusively on breast milk. Still, this annoying derangement is quite common among the latter.

Normally, during the first six months of life a child should have three or four evacuations from the bowels in the twenty-four hours. For the first two days after birth the stools consist of a thick, viscid, dark greenish, almost black substance called meconium. After the third day they are of a golden-yellow or whitish-yellow colour, of a consistence of thick molasses, and have a peculiar slightly sour odour and acid reaction. From the sixth month till toward the end of the second year there should be two passages daily. They are then of a brownish-yellow colour, have the consistence of mush, and a more decidedly fæcal odour. These changes in the character of the stools are due to alterations in the child's diet. If the infant be nursed exclusively until the tenth month, the nature of the evacuations will not change until that time. After the end of the second year the child subsists on a varied diet, and the motions, one a day, resemble those of the adult.

Now, constipation may be said to exist when the number of movements of the bowels falls below the normal, with a diminished quantity of fæcal matter expelled; or, where the fæcal mass is so hard and bulky as to cause severe straining with perhaps more or less discomfort or pain. However, if an infant under six months has but two motions, and after this age only one in the twenty-four hours, if the evacuations are of large size and of normal consistence, the condition can hardly be considered one of constipation.

I. The great length of the large intestine in the infant is a predisposing cause of constipation. The large intestine (colon) of the new-born infant is longer in proportion than that of the adult. In the infant it is three times as long as the body, and in some cases even longer, while in the adult it is only twice as long. The pelvis being narrow, the lower part of the large intestine is now and then found doubled on itself twice or even three times, instead of once—the normal condition. When these flexures are present, the movement of the contents of the intestine is retarded, the absorption of the fluid portion is facilitated, the fæces being thus rendered solid, and constipation ensues.

II. A faulty condition of the diet is unquestionably the most usual cause of constipation. Under this head may be mentioned, first, a superabundance of casein (cheese-forming material) in the milk, particularly in that of the cow. Human milk contains about 1 per cent. of casein, while in cow's milk there is a little over 3 per cent. This amount is, of course, reduced when the cow's milk is diluted with water in preparing it for the baby. Human milk containing too great a proportion of casein is generally very white and thick, instead of looking thin and bluish. This condition is sometimes due to a deficiency of water in the milk caused by too frequent nursing.

The casein of cow's milk differs in character from that of human milk. The latter is precipitated in fine flakes when acted on by the secretions of the stomach, and is easily digested and absorbed; whereas that of cow's milk is coagulated into a large and dense curd when taken into the stomach, and is more difficult of digestion.

A second error in the infant's diet is an excess of starch, as where arrowroot, barley, corn, starch, or some of the farinaceous baby foods are improperly used. An excess of starch or casein in the diet, by overtaxing the child's digestive power, and loading the alimentary canal with a large undigested residue, may set up a mild catarrh of the bowels. Too much mucus is poured out, and the fæcal masses, becoming coated with this slimy secretion, allow the intestines during their contraction to slide ineffectually over their surface.

A third faulty state of the food is the absence of, or a diminished amount of, sugar. In human milk there is 7 per cent. of sugar (milk sugar), while in cow's milk there is but a little over 4 per cent. In cow's milk this percentage is reduced by the addition of water in preparing it for the baby.

Lastly, an insufficient supply of drinking water will induce costiveness. When a child is deprived of water between feedings, whether he be nourished at the breast or on the bottle, the contents of the intestinal canal are liable to become dry and thick, and are with more difficulty propelled along this tube. Many mothers imagine that the thicker the food the more nutritious it is, and purposely avoid adding water. This is not so. Proper dilution of food facilitates digestion, absorption, and elimination of the refuse.

III. The intestinal mucus may be too tenacious, or deficient in quantity. This condition is often due to excessive perspiration or to too free secretion of urine. It may be dependent upon a chronic intestinal catarrh. The constipation accompanying fever is due to this cause. When the temperature of the body becomes elevated, and remains so for many hours, all of the secretions become perceptibly diminished.

IV. Too slight peristaltic movement of the alimentary tube. This state is frequently spoken of as "torpor" or "torpidity" of the bowels. There is a popular but erroneous belief that constipation in the mother or nurse may produce the same condition in the nursling. A sluggishness of the bowels may be inherited like any other peculiarity. The mother may be constipated and the infant have a diarrhœa, or the mother's bowels may be regular and the baby's constipated.

Inactivity of the bowels is often dependent upon debility of the muscular layer of the intestines from rickets or any wasting affection or lack of exercise, as when the infant's movements are restricted by tightly-adjusted or too much clothing. It may be due to a partial or complete paralysis of the intestinal walls from meningitis, particularly that form of the malady popularly known as "water on the brain," or from the administration of opiates.

V. The use of medicinal agents. The after-effect of such laxatives as castor oil and rhubarb is a constipating one. The repeated and injudicious administration of laxative medicines is very liable to give rise to a torpid state of the bowels. The presence of food in a healthy alimentary canal, by coming in contact with the sensitive nerves of the lining membrane, gently stimulates the bowels to alternate contractions and relaxations, by means of which the food, and later the effete material, is propelled onward. Laxative remedies, by their irritating effect on the mucous membrane of the intestines, excite an action similar to that produced by food, only in a greater degree. If this be repeated for any length of time the muscular structure of the intestines becomes worn out, and will fail to respond to the stimulation of the nerves communicating with the mucous membrane, the normal sensitiveness of which also becomes blunted.

Opiates, as paregoric, laudanum, or morphine, either administered as such, or in the form of a popular "colic remedy," "soothing syrup," "teething cordial," or "cough mixture"—for they all contain opium in some form—by paralyzing the muscular coat of the intestines and drying up the digestive secretions, produce a sometimes most obstinate form of constipation.

Preparations of lead, alum, iron, bismuth, chalk, nitrate of silver and vegetable remedies containing tannin, induce constipation by their astringent action on the intestinal mucous membrane.

VI. Mechanical obstructions. Constipation from these causes is fortunately quite infrequent in infants. They include tumours that press on any portion of the intestine; intussusception—*i.e.*, the inversion of one part of the bowel into another; twisting of the bowel; constriction of the gut by bands of new tissue; incarcerated hernia—*i.e.*, a rupture that has become constricted at the opening in the abdominal wall, either at the navel or in the groin, through which the gut has passed; impaction of dry and hardened fæces, imperforate anus. In this last-mentioned condition there is no anal aperture, due to an arrest of development of the lower terminus of the bowel. It is always discovered during the first few days after birth.

The definition of constipation as previously given would almost render a description of its symptoms unnecessary. There are, however, some things to which attention may be directed.

An infant whose bowels are habitually constipated does not necessarily suffer any injury by the want of a daily evacuation. Frequently the child seems perfectly well in every respect, and except for occasional local discomfort when he gets rid of an unusually large or hardened mass of fæces, may appear to suffer no inconvenience at all. Infants are now and then met with who have but one or two motions in a week or ten days, without receiving the least injury therefrom. But this immunity from evil consequences does not continue when such a condition has existed for any length of time.

In most cases of ordinary constipation there is a flatulent distension of the abdomen, with occasional colicky pains. The evacuations are dry, and often consist of little round balls like sheep droppings. There may be a scanty passage every day, and a large one every second or third day, or there may be but one large stool every second or third day.

In more severe cases, where the evil is of long standing, the distension of the abdomen becomes more marked, the infant appears uneasy and distressed, attacks of colic are frequent, sleep is disturbed, there may be some fever, the tongue becomes furred, the appetite capricious; the baby may want to nurse almost continuously, or he may refuse his food until driven to it by sheer hunger; in nervous children convulsions sometimes occur. These symptoms, of course, vary with the severity of the trouble, and disappear after the baby has had a free motion, either spontaneously, usually after violent straining efforts, or by the aid of some remedial measure.

(To be continued.)

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IN connection with the skin and its health-disturbances, people often find a difficulty in treating such ailments in a simple, yet effective manner. We have recently found in the emollient cream, known as Vinolia, an admirable basis, to which may be added various substances adapted for the cure of common skin troubles. An important addition is thus made to the family medicine chest in the form of this substance.

Examples of valuable, but simple, prescriptions for skin-ailments may be readily given. Thus, for painful itching of the skin, we should add fifteen grains of cocaine to one ounce of Vinolia, and incorporate the two ingredients thoroughly. The resulting ointment relieves the pain and itching at once; and it is also a useful application in erysipelas. For psoriasis, that intractable skin-disease, two drachms of Vinolia and fifteen grains of chrysarobin should be mixed, and a little applied to the parts.

Ringworm may be cured by the use of an ointment composed of ten grains oleate of copper and four drachms of Vinolia. Of course, constitutional treatment and removal of the affected hairs must also be carried out in addition to the local treatment. For itch itself, thirty grains of sulphur hypochlorite and one ounce of Vinolia are to be mixed, and applied at bedtime, after a bath, in which Vinolia Soap has been used for washing the skin.

LECTURES AT THE SANITARY INSTITUTE.—The following list of lectures, to be given at 8 p.m. on the following dates, has been arranged by the Sanitary Institute of Great Britain, London, for the special instruction of those desirous of obtaining a knowledge of the duties of sanitary officers:—1890. February 18th: 1. Introductory Lecture: Practical Considerations for Sanitary Officers (Mr. E. C. Robins, F.S.A., F.R.I.B.A.). February 21st: 2. Water Supply, Drinking Water, Pollution of Water (Dr. Louis Parkes, D.P.H.Lond.). February 25th: 3. Drainage and Construction (Professor H. Robinson, M.Inst.C.E.). February 28th: 4. Ventilation, Measurement of Cubic Space, &c. (Sir Douglas Galton, K.C.B., F.R.S.). March 4th: 5. Sanitary Appliances (Professor W. H. Corfield, M.A., M.D.Oxon.). March 7th: 6. Scavenging, Disposal of Refuse and Sewage (Mr. Charles Jones, Assoc.M.Inst. C.E.). March 11th: 7. Food (including Milk), Sale of Food and Drugs Act (Mr. Charles E. Cassal, F.C.S., F.I.C.). March 14th: 8. Infectious Diseases and Methods of Disinfection (Mr. Shirley F. Murphy, M.R.C.S., M.O.H. for the County of London). March 18th: 9. General Powers and Duties of Inspectors of Nuisances; Method of Inspection; and, March 21st: 10. Nature of Nuisances, including Nuisances the Abatement of which is difficult (Mr. J. F. J. Sykes, M.B., B.Sc., D.P.H., M.O.H. for St. Pancras). March 25th: 11. Diseases of Animals in Relation to Meat Supply. March 28th: 12. Sanitary Law: General Enactments, Public Health Act, 1875, Model By-laws. April 1st: 13. Sanitary Laws and Regulations Governing the Metropolis (Mr. A. Wynter Blyth, M.O.H. for St. Marylebone). A fee of 6s. for the course will be charged to cover expenses, and students attending the course will be granted free admission to the museum and library during February and March.

CHEMICAL ANALYSIS.—DR. DRINKWATER, Lecturer on Chemistry in the Edinburgh Medical School, undertakes the Analysis of Water, Foods, Wall-Papers, and of all other products and articles connected with Household Health and Commercial Interests. Terms on application to Dr. Drinkwater, Chemical Laboratory, 41, Chambers-street, Edinburgh.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

IS MEDICINE A SCIENCE?

BY DR. G. M. GOULD.

(Concluded.)

IN the same, though possibly in a less striking, way, there has been a noteworthy advance "all along the line," so that there is now no subject of medical study that does not bear witness to the spirit of accurate and exhaustive research that characterizes our age. New drugs and therapeutic agents are sought with eagerness—and found where they would least be expected. The very refuse of coal-oil refineries is wonderfully enriching our *materia medica*. Every substance, whether organic or inorganic, that may possibly influence the animal economy for good or ill, has been repeatedly tested by manifold timed and guarded experiments upon animals, and finally upon the human being, until its powers are determined with the precision required in the case of a new explosive, or the torsion balance. Occasionally there is a sadly ludicrous side to this feverish eagerness, and duped over-confidence finds itself landed in the quagmire of an elixir dream. But the trained intelligence and massive strength of the great body of the profession smiles at such sorry delusions, and calmly pushes forward to predestined victory. Simply to enumerate the larger incidents of the advance would require a volume, not a page. The finally convincing proof is the work done. By its fruits must any work be judged. Let us, finally, glance at statistics. Nothing is definitely known unless one method of the knowledge be numerical. "The 'sometimes' of the cautious is the 'often' of the sanguine, the 'always' of the empiric, and the 'never' of the sceptic; but the numbers 1, 10, 100, 10,000, have only one meaning for all mankind." In 1861-70 the English death-rate from the seven chief zymotic diseases—small-pox, measles, scarlet fever, diphtheria, whooping-cough, fever (typhus, typhoid, &c.), and diarrhœal diseases—was 4·248 per 1,000 living. In 1887 it was 2·385—very little more than one half! Whether a science or not, it is plain that medicine has, in this aspect, and in England alone, saved over 67,000 lives. A remarkable instance is the class called fevers, the number of deaths from which in twenty-five years has been reduced from about 20,000 a year to 5,873.

Despite the general carelessness caused by the prevalent belief in the non-contagiousness of phthisis, and by the use of tuberculous milk and meat, in England from 1850 to 1880 there has been a reduction in the number of deaths from this dread disease amounting to 327 per million. But the death-rate for other respiratory diseases has remained the same—a fact that is in truth a cause for congratulation, when it is remembered that the urbanization of all England that has gone on during this period, together with the unhealthy commercial and manufacturing slavery of the masses, would doubtless have doubled the mortality, had not Medicine and her handmaid, Sanitation, been everywhere heroically at work to forefend and to save. In the same way is to be explained the increase in the death-rate for diabetes, chronic renal affections, and nervous diseases, due to the intensity of the mental strain and worry of modern commercial and fashionable life. That the

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Had it not been for the kindness of this gentleman mentioned above in giving and recommending your powders (and who would, if necessary, confirm my statement), I should, I believe, never have regained as well as I have health and the use of my limbs.

I am, sir, yours truly, SARAH PEARSON.

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death-rate has not been trebled is to the credit of scientific medicine.

The decline of the entire English death-rate summarizes the whole matter for us. Within 100 years that of all Europe has fallen from 34 per 1,000 living to about 20, and that of England to 18·5.* The death-rate of the English army has been reduced by more than one-half within the century. In the strict census-taking period, the mortality of English males has been reduced 2·88 per cent., and of females, 7·62 per cent. This adds about one and a half years to the average life of males, and three to that of females. Or, according to Dr. Ogle, a million males will live 1,439,139 additional years, and a million females, 2,777,584 years. Each year there is thus placed to the credit of each average million of the new-born a life surplus of about two million years. Has the community, then, no debt of gratitude to the medical profession?

If we take the debit and credit of each disease, we get the following table:—

Annual Deaths per Million Living in Two Decennia.

Cause of Death.	1861-70.	1871-80.	Annual Increase or Decrease in 1871-80.
Small-pox	163	236	+ 73
Measles	440	378	— 62
Scarlet fever	972	716	—256
Diphtheria	185	121	— 64
Whooping-cough	527	512	— 15
Fever	885	484	—401
Diarrhœal diseases	1,076	935	—141
Cancer	387	473	+ 86
Phthisis	2,475	2,116	—359
Hydrocephalus	347	317	— 30
Other tubercular diseases	437	445	+ 8
Diseases of the nervous system	2,785	2,770	— 15
,, ,, circulatory system and dropsy	1,349	1,477	+128
Diseases of the respiratory system	3,364	3,760	+396
,, ,, digestive system	981	978	— 3
,, ,, urinary system	298	392	+ 94
Puerperal fever, childbirth	165	167	+ 2
Violence	765	733	— 32
All other and unstated causes	4,815	4,262	—553
All causes	22,416	21,272	
Balance of decrease	.....	.....	1,144

The figures are not to be had for the past ten years, in which a marvellous and continuous decline in the death-rate is still in progress. If we estimate that 1,500 lives per million are being saved the English people by medical science and sanitary legislation, we get a grand total of saved lives of over 50,000 a year, and therefore find this single people richer in twenty years by more than a million people. As nowadays we estimate everything in terms of money, we may apply that method to life itself; and taking Dr. Farr's low estimate of the worth of an English life, the mean net value of the phenomenon called an agricultural labourer (750 dols.), we should, by this "buyer's appraisement," have a saving of something less than a thousand million of dollars. But what valuation could be made of the lives of such men as Bessemer and Darwin, supposing them not among the saved? English statistics have been made the basis of illustration, but scientific medicine has penetrated into all civilized countries—among six hundred millions of people. Supposing that the saving of life and sickness in other countries has been but one-half that in England, we have yet to multiply all our figures by ten.

But the account is not yet closed. Dr. Farr estimates that for every annual death two persons are on an average suffering continuously from sickness. At the lowest rating there are two years of severe illness to every death. If, therefore, according to the previous calculation, 1,500 English lives are saved each year, 3,000 years of sickness are also annually saved. Even this tremendous saving may be multiplied many times by including the numberless and unknown, but certainly existing, cases where disease is aborted, cured, or prevented by the skill that gives back to the healthy class persons who without treatment might not have died, but who would have permanently passed into the class of those maimed, crippled, or weakened by chronic or partially overcome disease. In such regions as these, money considerations are as much out of place as to talk of buying a sunset; and though it might be frankly admitted that as a business the medical profession would be pleased to take as a compensation 10 per cent. of what it saves society, it assuredly infinitely prefers intelligent co-operation and esteem. That profession alone at the present time offers the spectacle of a large, compact, self-conscious body of men, driven by no bigotry or zealotry, or tempestuous *Zeitgeist*, working with eagerness, determination, and almost the assurance of success, toward its own undoing—toward the annihilation of its means of subsistence and its very existence. It may be that disease will never be eliminated from human life; but none are prouder than medical men of their partial success in this; none more elated over the prospect that now seems almost assured, of striking a final death blow at the root of all contagious diseases, or those which cause the vast majority of all death and sickness. In this highest of all human offices they ask only sympathetic help. They, too, are certainly bearing their share of the present burden of the world's manifold troubles. It is hardly an exaggeration to say that for a full half of its present daily service, it not only asks no pay, but is glad and proud of its spontaneous charity. Every physician treats the poor free of charge, and in nearly every square of all our cities dispensaries and hospitals are found, where the best and highest medical service is at the disposal of all without charge. Medicine is thus not only a science, but it is an art; not only an art, but a moral system, and almost a religion. Is there, has there ever been, another such unselfish work done outside the religious faiths? Take the law, for comparison, and, except in rare and exceptional cases, can a poor factory girl or workman get from analogous legal institutions talent for his defence, and, by its aid, justice before the law, without first laying down a handsome retainer? Even with the most just of causes, unless the money at stake be immense in amount, is it not wiser to allow injustice to rule than to seek redress in a modern court of equity? What is the appreciation shown the science of medicine? One instance only need be given as an answer. In the so-called medical centre of the United States 20,000,000 dols. is spent to construct a palace, rich with marbles and carvings, largely for the use and behoof of ward politicians; but never a thousandth part of such an amount to endow an institution of medical education, sanitary research, or preventive medicine—things certain to repay, even in dollar values, a thousandfold, and in health, progress, and beneficence, incalculable blessings throughout all coming time!—*The Forum.*

* The death-rate of Brooklyn and New York, which should be far lower than that of London, is far higher. If it were only equal, there would be an annual saving of 16,000 lives and 32,000 years of sickness.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

The Domestic Filter.—We must not, of course, expect too much from any mechanical arrangement; and a filter which readily separates all foreign matter visible to the unaided eye, and leaves the water clear and bright, may be regarded, and with truth, as an appliance of some value; and so, if we stop there, well and good. We may be thankful when muddy water only is at hand, that we have a means so simple for making it much less repulsive, and, to some extent, much less unwholesome. The fraud and deception come in when manufacturers sell filters which they warrant will not only strain, but absolutely purify water—will render water polluted by sewage, for instance, safe and salutary as a beverage. This can only be done under certain exceptional circumstances, and for a very short time: a carbon block which is re-burnt or renewed every day can do it, but for that day only. If unchanged, it begins to fail on the second day, fails utterly on the third, and makes the water microbically worse than it was before filtration, and that in an increasing degree the longer it remains in use. And the dishonesty in selling a filter guaranteed to do what it is perfectly clear it cannot do, is made worse by the false security it inspires in users who have not yet got over the unreasoning and blind faith which believes that whatever is printed must be true, and unquestionably true if two or three pseudo-scientific testimonials, from men who make a business of writing them, be appended. In the newspapers, in the advertisement sheets of medical and science journals, we constantly see statements in reference to filters ludicrously untrue in fact, and of which it is hard to say, as of so many other trade announcements, which is the more extraordinary—the mendacity of the sellers or the credulity of the buyers. The best of all filters, the simplest and cheapest, is a cone of unsized paper supported in a glass funnel. It involves a little trouble in using, but its economy—a hundred discs a foot in diameter can be bought for a shilling—compensates for that. And with these carbon can really be efficiently used as an absorbent and indirect oxidizer. Several weeks' supply can be re-burned, powdered, and preserved in full activity in a stoppered bottle, and a teaspoonful or so added to each new cone. The paper should be changed every day, or at least every second day, and the funnel should have a metal cover, and be washed frequently. It cannot exclude microbes, but it will certainly not lead to their multiplication. Half a gallon of water a day, enough for the drinking purposes of a tolerably large family, could be prepared in this way by a filter of the size I have mentioned, and will come out bright and sparkling in the vase it is received in. For cooking purposes the ordinary filtered water supplied by the companies is pure enough, the boiling which the act of cooking necessarily involves destroys the lethal activity of all organic matter contained in it; and there is no danger in using water—to take an extreme case—having the *materies morbi* even of enteric or scarlet fever mixed with it, if that water be thoroughly boiled for an hour or so, as it would be in the ordinary culinary operations of the kitchen. It is when such polluted water is used cold for the adulteration of milk, or, as has happened more than once, for simply washing the vessels it is collected or carried in, that danger or death ensues.—*Dr. Masterman.*

Responsibility in the Insane.—That voluntary power is invariably impaired in insanity is not perhaps evident to those who have not looked closely into the matter. Is it not true, it may be asked, that some insane persons exhibit extraordinary fixity of purpose, and persist in some course of conduct—as, for example, the refusal of food—with dogged obstinacy? That is so, but insane obstinacy is no more an indication of voluntary power than is the late rigidity of a paralyzed arm. That state of late rigidity in which the arm could not be stretched without being broken betokens that certain lower centres have been cut off from intercourse with higher ones, and are undergoing degeneration; and so the unreasonable obstinacy of lunatics in insane conduct merely indicates that certain mental functions have escaped the regulation of volition, which is enfeebled, and are acting in an irregular and self-willed manner in consequence. No doubt in all cases of insanity a certain amount of volitional power is retained, and this may in certain cases be effectual to some extent over the morbid mental manifestations. There may be contributory negligence on the part of a lunatic, just as there may be on the part of an invalid. Prof. Rühle, of Bonn, recommends the birch-rod and shower-baths in certain cases of chronic vomiting, and asserts that children often die of a bad bringing up, and adults because they cannot, when ill, make up their minds to do what is right and omit what is hurtful; and Niemeyer quotes with approval the dictum of the wife of a Prussian general, a most determined woman, but a tender mother, that whooping-cough is only curable by the rod. But no one in this country would now sanction such heroic treatment, or believe that anything but evil could come from such stringent appeals to a mere remnant of will in its corporeal relations; and so it would be dangerous in cases of insanity, in which will is obviously and seriously involved in its mental relations, to infer that what survives of it might, if put forth, have prevented a criminal act. In insanity, in which the mental movements are typically involuntary, but yet susceptible of some control, we must not expect of the patient what is beyond his strength—the habitual suppression of his morbid impulses. The criminal act of a lunatic is sometimes so alien to his healthy disposition, or so clearly motiveless, that we have no hesitation in concluding that his true will must have been in abeyance when he fell into it. At other times it follows upon mental struggles which he has himself described, and asked help in, previous to its commission, and is therefore clearly but the climax of a pathological process signifying the overthrow of the will. And at other times, again, it is associated with mental and bodily symptoms which, our experience has taught us, correspond with complete paralysis of will. A lunatic may unquestionably commit a crime under ordinary motives. It cannot be contended that every mental oddity and isolated delusion is to put a man beyond the pale of the law, but it is to be remembered that a really isolated delusion is a rarity, and that most delusions are but local manifestations of a constitutional vice, involving weakening of will. Most lunatics are, it has been said, mad to their finger-tips; and what appear to be their sane acts are generally more or less tinctured with insanity.—*Sir J. C. Browne.*

London Necropolis, Brookwood, Near Woking, Surrey. The largest and most beautiful cemetery in England. Five hundred acres exquisitely planted. Simple funerals. Earth to earth coffins can be used if desired. Pamphlets gratis. Apply—Secretary, 2, Lancaster-place, Strand.—[Advt.]

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

TWO BOOKS ON CITY LIFE.

(1). *The Town Dweller: His Needs and His Wants.* By J. Milner Fothergill, M.D., with an Introduction by B. W. Richardson, M.D. (London: H. K. Lewis. 1889.)

(2). *Health Troubles of City Life.* By George Herschell, M.D., &c. (Second Edition). (London: Swan Sonnenschein & Co. 1890.)

These two books deal essentially with the same topic, but vary greatly in their mode of treatment. Dr. Herschell's little volume, reviewed in our pages on the appearance of its first edition, may be dismissed with a repetition of our former opinion, that it contains a considerable amount of information likely to be useful to city men. He has enlarged his book, and has added diagrams of pulse-tracings; but we might again recommend Dr. Herschell to revise yet more closely his terminology, and to avoid such an expression as "the etiology of this affection is very similar to that of paretic dementia"—phraseology this, not "understanded of the people," and least of all by busy city men for whom his pages are specially intended. As a useful *vade mecum*, which contains much sound hygienic advice appropriate to those whose lives are spent amid the roar and bustle of a great commercial centre, Dr. Herschell's *brochure* will certainly serve a good purpose.

Dr. Fothergill's book is a posthumous work—a statement we make with deep regret, because the medical profession could ill afford to lose a brilliant writer who "adorned whatever he touched," and also because, by Dr. Fothergill's death, Health lost a valued contributor. Many of our readers will remember the series of articles he contributed to our pages under the title of "Mind and Liver;" and to those who read and enjoyed the graphic style of these articles, the volume under notice is certain to prove attractive.

In 1887, Dr. Fothergill read a paper on "The Effects of Town Life upon the Human Body" before the British Association of that year, and the volume before us is a development and elaboration of that paper. Dr. Richardson has a well-chosen introduction to the work, in which he appropriately dwells on the author's noted powers of rendering abstruse topics clear to the ordinary and non-technical reader. He instances the description of the body's development (pp. 90 and 91), and of the brain (pp. 98 and 99), as examples of Dr. Fothergill's happy style, wherein by a series of artistic touches, as it were, the mists of technicality disappear and the plain facts of science become clearly revealed to the comprehension of the unscientific.

This topic of town life, and its effects upon the physical and mental development of the masses, is coming year by year to the front as a subject of national hygienic and social interest. Mr. Cantlie, Mr. Galton, and others have taken up the theme, and have shown that deterioration of more or less marked character is the fate which awaits the race of men which dwells in the crowded streets of a great city, and which competes for bread and the other necessities of life with fierce and uncompromising hand. Very graphically, throughout his pages does Dr. Fothergill sketch the life of the "Town Dweller." His beginning as an immigrant from rural parts, his surroundings, the air he breathes, the water he drinks, the food he eats, his beverages, his work, his amusements, his mind and body, and his progeny—all are duly passed in review before the reader. The dangers of the city life are duly emphasized, and the remedies which may be relied upon to correct the deteriorating process are as clearly detailed. The book is one we could wish to see very widely read by the people. It is more than a merely informatory volume; it is rich in suggestions regarding the healthy life.

The author's well-known sense of humour appears refreshingly now and then in its pages. Two examples will suffice to show that Dr. Fothergill's book is the reverse of "dry." The Cockney Lord Mayor, hunting the hare of old in Epping Forest, was told that the animal was coming his way. "'Let him come, I fear him not,' cried the valiant City Father, and then drawing his sword and brandishing it, he continued, 'I thank my God I fear him not.'" The second illustration of city ignorance of country life was afforded by a London boy recently boarded out in the country, who, in recounting his experiences, said, "'And at breakfast yer don't have the milk in a clear white jug. They takes it from a nasty hot cow—I see'd them at it,' he continued, to silence any sceptical auditor."

HEALTH HINTS.

Health and Habit, a Book of Golden Hints for Middle Age, devised from the Works of Eminent Medical Men, and Edited by Guy Beddoes. (London: Swan Sonnenschein & Co. 1889.)

This work also deals, in a certain sense, with city life, since the author, in his sub-title, tells us that his work has "special reference to ailments besetting professional and business men at the present day." He has strung together a large number of extracts from the works of eminent medical men, deceased and living, and ranging from Abercombie, Abernethy, and Forbes, to Sir Henry Thompson, Sir J. Crichton Browne (called "Dr. Crichton Browne, of Wakefield Asylum," by the author, in a quotation on the back of his title-page), and Sir W. Gull. The book is a kind of *olla podrida*, which is interesting enough perhaps to dip into now and then, but which appears to present no advantage whatever over any systematic treatise on family medicine, or any of the numerous manuals of hygiene at the command of every reader.

MEASLES.

The Prevention of Measles. By C. Candler, Melbourne, Victoria. (London: Kegan Paul, Trench & Co. 1889.)

Mr. Candler's previous work on the "Prevention of Consumption," duly reviewed in these pages, led us to expect an original volume in the shape of the present treatise. In this expectation we have not been disappointed. From his introduction (wherein he complains of the want of "practical good" which has accrued from the publication of his first book) to the close of the volume, Mr. Candler does not allow the attention of the reader to flag. He has a grave complaint against those who expect a theorist on the causation of disease to produce his microscopical specimens or statistics, and boldly declares that, undaunted by the charge of writing another "purely speculative" book, he will have his say out about measles. Briefly debated, his work is an exposition of the views of Dr. Salisbury, that measles is a disease caused by the microscopic fungi, or lower plants, found on straw, This is the keynote of the volume. The "straw-mildew" theory of the origin of measles was

probably not precisely Dr. Salisbury's hypothesis, but was certainly suggested by his views and opinions.

Despite the fact that this theory has not been either much heard of on this side of the Atlantic or much credited as an explanation of the cause of measles, it appears to us to be well worthy the study of physicians; and Mr. Candler's book will certainly be found to set forth in detail the evidence for the correctness of this explanation of the origin of the common fever in question. The prevention of measles, according to our author, principally consists "in taking steps to preclude mildewed straw from domitories—a matter easily compassed." That Mr. Candler's views will be hotly combated, goes without saying; but a chief merit of his book, in our opinion, consists in its fresh suggestion of the belief, already widely held, that the germs of disease are merely ordinary forms of fungi which have become modified so as to assail and to breed within the animal frame. Every physician should peruse this book.

A HANDY REFERENCE BOOK.

Ready Reference: the Universal Cyclopædia, containing Everything that Everybody wants to Know. Compiled by W. Ralston Balch. (London: Griffith, Farran & Co.)

This is one of the most useful books we remember to have seen. It is really encyclopædic in its extent, and thoroughly accurate in its information. There is no subject, from legal and nautical terms to explosives, or from the cost of Solomon's Temple to the law for wives, which is not to be found explained in its pages. It is an indispensable volume to the student, business man, and, indeed, to "all the world and his wife." For journalists it is simply invaluable.

Sanitary Appliances, Etc.

MACLEAN'S REVALENTA FOOD.

This food has been before the public for many years, and has fully justified the high reputation it enjoys as an admirable article of diet for young and old alike, and especially for dyspeptics. The analysis of this food shows that it contains over 60 per cent. of carbohydrates, and over 20 per cent. of nitrogenous matter. The bone-forming constituents are also very fully represented in its composition. For any meal of the day Maclean's Revalenta will be found both nutritious and sustaining. In itself it is a very typical food, containing, as it does, both nitrogenous and non-nitrogenous elements, such as the body demands for its adequate nutrition. For the morning porridge it is especially suitable, being so sustaining, and without the heating effects of ordinary porridge. The wholesale agents of Maclean's Revalenta are Messrs. Hertz & Collingwood, 101, Leadenhall-street, London, E.C.

Fifth Edition.—Now Ready.—Greatly Enlarged, and completely Revised.

"*A Book every Young Man should read.*"

"A Lecture to Young Men on Purity of Life and the Preservation of Health." By A Graduate. Price One Shilling, or post-free, 1s. 1d., from Henry Renshaw, Medical Publisher, 356, Strand, London, W.C.

This pamphlet, now being issued in its Fifth Edition, forms a complete refutation of quackery of all kinds, and is a safe and reliable guide, from the medical standpoint, to all young men. Every Youth should read this pamphlet as a guide to the safe conduct of life in a moral and physical sense.

IMPORTANT ANNOUNCEMENT.

A NEW VOLUME BEGAN WITH THE NUMBER FOR FRIDAY, OCTOBER 4th, 1889.

BONUSES TO SUBSCRIBERS TO "HEALTH."

Health, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the Publisher, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain Health from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we offer the following Free Gifts and Bonuses to all who subscribe to Health for one year or longer:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of Health, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of Health weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of Health so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of Health, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to Health, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with Health should be addressed directly to the Publisher, 2, Paternoster-square, London, E.C., and *not to the Editor.*

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, Paternoster-square, London, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. **All questions are answered free of charge in the columns of HEALTH. A limited space only, is available for the insertion of replies each week.**
2. **All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.***
3. **Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.**
4. **Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.**
5. **Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.**
6. **From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.**
7. **No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.**

NOTICE TO WRITERS OF ARTICLES.—All articles sent to the Editor of HEALTH must be accompanied by stamps to ensure their return in case of rejection. It must be distinctly understood that the Editor and Proprietor do not hold themselves responsible for the loss of rejected communications.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL

KILLUCAN.—The symptoms to which you allude in the child appear to us to be those of worms. We advise you to watch her carefully, and if you detect the presence of the parasites let us know, and we will advise you again. It is just possible that if there is constipation, this may be the cause of the symptoms. Give her vegetable food, stewed fruits, &c., and ten drops of Cascara Cordial in water, once daily, between meals; or try an injection of a teaspoonful of glycerine, either plain or diluted with water, as perhaps better and more effective than medicine. By this plan you may fix a habit on the bowels which will remain permanent and save all further trouble. For the tonsils, there is nothing better than the glycerine and tannin. The salicylic treatment is not adapted for children.

WILLIAM HAY.—Rest after your meals; avoid excess of vegetables; take a little stout or claret to your dinner; and when flatulence is present, take five drops of pure Terebene on a piece of sugar. For the cure of constipation, try the diet and Cascara as ordered to "Cambuslang" in the present number.

MOONY.—1. See advice given to "Separens" in the present number. 2. Certainly; change your underclothing completely after cycling, and rub down, or take a tepid bath; and see that your cycling underclothing is duly dried and ready for next day.

FRANK R.—For the eczema, use Vinolia as an ointment; and for your digestive troubles, rest rigidly after your meals, as a necessary health-rule. Avoid excess of vegetables, and take five drops of pure Terebene on a piece of sugar when flatulence troubles you. You might try also, as a tonic, the Inman's Hypophosphites, taking this after food, in a teaspoonful dose in water, thrice daily. If these measures do not relieve you, write again.

MOST ANXIOUS.—Avoid reading and writing at night for a time, and use a little of a lotion (made by adding six grains sulphate of zinc to six ounces of rose water), diluted with water, for the eyes morning and night. For the other symptoms, take the pill ordered to "G. Fair" in HEALTH No. 356.

W. K.—1. Use Vinolia as an application for the blotches. 2. Eat less cheese, and take plenty of vegetables as part of your diet daily. The Vinolia should also be applied to the pimples.

WRECKED.—The whole tone of your letter shows us that you have simply worked yourself up into such a state of nervous excitement that the simplest and most trifling symptoms become exaggerated into those of the gravest ailments. We warn you that it is this nervous irritability and depression (without adequate cause), and nothing else, from which you suffer; and that until you give up thinking and brooding over your fancied ailments you will not recover your tone. We do not speak harshly, but until you realize that there is nothing radically wrong with you, it is useless for any one to advise you. Read the latest edition of the pamphlet you name, and follow out its advice as to diet. Take a tepid sponge bath every morning, and twenty grains of bromide of potash at night. The diet-hints (with Cascara) will cure your constipation. In addition, take plenty of out-door exercise, and mix freely with your friends—in a word, neglect your ailments, and they will neglect you. If you desire to seek the advice of a skilful physician, we can send you address of such, if you will send stamped addressed envelope; but we are certain his opinion of your case (clearly expressed as that case is in your letter) will be what we have said above. Our experience of hundreds of cases like yours is that attention to diet, and exercise, and above all, the avoidance of brooding over your symptoms, are the true means of cure.

SUSSEX.—Try bathing the knees in hot salt water at night; and take twenty grains bromide of potash twice daily, between meals, when the pains trouble you. Avoid much flesh food, and drink Vichy Water. Bayley's Wood Oils (advertised in our pages) should be used as a liniment.

K. MURRAY.—The injection you name is not advisable. It is far better to employ one made by adding a very little Condy's Fluid to tepid water.

NOUS VERRONS.—Why not? you do not surely suppose that you suffer from any ailment at all? So soon as you feel well and vigorous, you may think of the step you propose.

BALD.—See advice given to "A. P. Sword," in HEALTH No. 356. Use soft brushes only; and wash the head once every ten days with Vinolia Soap and tepid water. If you feel out of sorts, take the tonic ordered to "Frank R." in the present number.

G. GRIFFITHS.—Inhale the vapour of hot water to which a little of Stern's Pumiline Essence has been added; and keep to your room for a day or two during treatment. At night rub Stern's Pumiline Liniment (see advertisement in our pages) on your chest, covering the chest with flannel after rubbing. Internally, take Möller's Cod Liver Oil after meals.

SPECIALIST.—You ask an impossibility—short of a dye. Apply to the French Hygienic Society, 6, Conduit-street, London, W. for a harmless dye. If you desire a hair-stimulant, see advice given to "Bald" above.

JAMES MCMILLAN.—Read the pamphlet "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full information in its pages.

NEMO.—See advice given to "Bald" above. A little brilliantine (to be had of any druggist) will serve the purpose you name.

ENQUIRER.—1. See advice given to "A. Cand" in HEALTH No. 353. 2. Wash with Vinolia Soap only; press out the blackheads (which are the cause of the pimples), and use the lotion ordered to "Carrington" in HEALTH No. 356. 3. No; Inman's Syrup of the Hypophosphites (advertised in our pages) is much preferable for your case as a tonic.

STELLA.—It might act favourably; but the true remedy is care in diet.

EDINBURGH.—The clear and only advice is to avoid all indulgence in stimulants, and if need be, to become an abstainer. Sulphonal—say two or three five-grain tabloids (Burroughs and Wellcome's) for a dose—is preferable to opiates as a sleep producer in such a case. The case you name is also one for great care in diet. Light food and peptonized milk should be taken. Rest after meals is necessary.

A. R. LESLIE.—1. Apply to the Medical Battery Company, 52, Oxford-street, W., for their catalogue of trusses and abdominal belts. 2. Stern's Pumiline Extract certainly, used in the bath.

OXALIS.—Try Loeflund's Condensed Cream Emulsion (to be had of all chemists), and take it as directed on the bottle. This will agree with you perfectly in place of the Cod Oil.

A. K.—Rest after your meals, and see that you eat slowly and masticate your food thoroughly. Take a little beer or stout with your dinner, or a glass of claret, and you will find the symptoms you name to disappear. Avoid salt foods, cheese, and pastry, and give up tea and coffee for a time, taking Van Houten's Cocoa instead. The pills ordered to "Alexander Rae" in HEALTH No. 356 should also be tried by you.

UNDERGRAD.—We incline to believe that your trouble was more of vesical than of kidney nature. In your present state we should recommend you to avoid excess of flesh-foods, and to take such foods more in the form of soups (use Brand's Beef Essence) than in the form of solid food. For the rest, milk, farinaceous foods, rice-puddings, &c., should be taken. As to medicine, try Fer Bravais in twenty drop doses, thrice daily, after meals. Avoid alcohol, and drink Kronenquelle Water as a suitable beverage. Rest is of course necessary; and you must clothe warmly and avoid all exertion. Let us hear how you are in a week or two.

GANTS.—Re-paint and paper the room. This is the only safe course. Fumigate it first with the vapour of burning sulphur (one pound to each 1,000 cubic feet of space), and wash the floors, &c., with Sanitas Soft Soap and hot water; then re-paint.

LOMOND. — Try Horsford's Acid Phosphate as a tonic likely to do you good. You take alcohol certainly in excess—relatively to your wants—and your tobacco may also be reduced with advantage.

E. GREENBERG.—1. Mellin's Food certainly. That you are using is not adapted for the child. 2. Give Stern's Pumiline Preparations a fair trial (see advertisement in our pages), and use the Extract for baths especially.

Tired Brain

Horsford's Acid Phosphate,

A brain food. It increases the capacity for mental labour, and acts as a general tonic. It rests the tired brain, and imparts thereto new life and energy.

Dr. ED. T. JOHNSON, M.R.C.S., 121, Rice-lane, Walton, Liverpool, says: "I have used it with very good results in cases of overtaxed and overworked brains, one in particular, a schoolmaster, where it acted like a charm."

Dr. JNO. LAMBE, M.R.C.S., West Villa, Shurdington, No. Cheltenham, says: "It produced good results in sick headache and brain prostration, tranquillizing the irritation, giving comfortable sleep."

Descriptive pamphlet post-free on application to
Rumford Chemical Works,
Providence, R.I., U.S.A.

Beware of Substitutes and Imitations.

CAUTION.—Be sure the word "Horsford's" is printed on the label. All others are spurious. Never sold in bulk.

A. B. C.—1. The dose is quite a proper one; but the total daily quantity should not exceed thirty grains. 2. Try Fry's Cocoa in preference to tea, and you will probably find your ailment to disappear. 3. No; but the Revalenta Food may act as an efficient substitute in such a case.

C. C. CLARKE.—Only flatulence; give Woodward's Gripe Water as a safe remedy.

JIM A. S.—Use the following lotion, to be applied with a piece of lint, and allowed to dry on the parts: Powdered calamine (ver.), two drachms; powdered zinc oxide, one drachm; glycerine, one drachm; camphor water, to make up six ounces. Label: "For external use only."

KANGAROO. —Give Mr. Pulvermacher's belts a fair trial (194, Regent-street, London, W.); send him full particulars of your case.

SEPARENS. — The following hair-lotion should be tried: Quinine sulphate, twenty grains; glycerine, one fl. ounce; Cologne, two fl. ounces; bay rum, two fl. ounces; rose water, eleven fl. ounces. Rub the quinine with the glycerine, and add the other ingredients in order named. Keep the hair short, and wash it once a week with Vinolia Soap and tepid water.

CAMBUSLANG.—Try a vegetable dietary —stewed fruits, apples or oranges, &c., and whole-meal bread, with Scott's Oat Flour for supper and breakfast; avoid tea and coffee; take Cascara Cordial, twenty drops in water, between meals, once or twice daily. Sponge with cold water each morning; sleep on a hard mattress; take plenty of open-air exercise, and avoid fluids and suppers late at night.

R. E.—Wash the hair twice or thrice weekly for a time with a pint of hot water (soft) in which a piece of lump ammonia the size of a Brazil nut and a slightly larger piece of borax has been dissolved. Allow the fluid to cool, and use as a wash.

E. PEARSON. — Take Blaud's Pills (Inman's) after food, one pill twice daily at first, and to be increased by one pill daily, until, say, six are taken each day in your case.

SHROVE TUESDAY, February 18th.—HOW TO MAKE PANCAKES: Half-pound of flour, one teaspoonful of BORWICK'S BAKING POWDER, and a little salt; mix well dry, add an egg or two beaten up, and sufficient milk to make a thin batter, and fry at once with lard or butter.

A. R. G.—For piles, try Bayley's Remedy (17, Cockspur-street, London, S.W.), and continue to avoid constipation by care in diet. Cases like yours improve through the simple means of taking a little castor oil every second day.

FRANK AYRE.—Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full information in its pages.

OARSMAN.—The heartburn may be relieved by your taking Vichy Pastilles. Another remedy is: Bicarbonate of soda, one drachm; tincture of calumba, six drachms; dill. water, to six ounces. Mix. A tablespoonful to be taken every three hours. Avoid all acids, fruits, sugar, pastry, &c.

J. JENKINS.—Cut the hair short over the parts affected, or shave it away as completely as you can, and apply an ointment to be compounded as follows: Lanolin, zinc oxide, and vaseline, of each two drachms; resorcin, one drachm. Mix, and label: "Apply night and morning to the part."

OCULAR.—You must be properly fitted with spectacles, as a proper fit serves to cure such irregularities. Write to, or call upon, Mr. Browning, 63, Strand, London, W.C., and take his advice regarding the glasses adapted for your cure.

G. WALLIS. — Try the effect of taking twenty grains bromide of potash on going to bed in a wineglass of water, and repeat the dose between meals during the day if your symptoms still trouble you. If not cured, write again.

M. BAXTER.—No drug alone can ever cure constipation. Try Cascara Cordial in twenty-drop doses, taken in water, once or twice daily, between meals; and follow up this remedy, and render its effects permanent by the use of a diet largely vegetable in its nature, such as Grant's Oat Flour, stewed fruits, prunes and apples, ordinary vegetables, &c.

ROBERT H. — Rest rigidly for fully an hour after your meals, as a necessary rule of health; and if troubled with flatulence take five drops of pure Terebene on a piece of sugar. Avoid excess of vegetables; and for potatoes substitute stale bread. You suffer from indigestion, and the above hints may cure you. Avoid excess of tea and coffee, and try Grant's Oat Flour instead.

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